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Solutions

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National Convention Votes to Increase Security Using BWA

By Lois Mentrup

Motorola's Canopy wireless broadband system helps public safety agencies boost homeland security quickly, efficiently and cost-effectively.

At political conventions, not everyone gets to partake in the festivities. It takes a lot of work behind the scenes to prepare for such an event, and installing security measures to ensure the safety of participants is a number one priority.

That's why the Boston Police Department turned to the Motorola Canopy™ wireless broadband system and [Community WISP](#), a wireless Internet service and network provider in the greater Boston area, to help it beef up security for the Democratic National Convention held in July.

Community WISP installed video surveillance cameras on top of 10 downtown office buildings, all located within 10 miles of the Canopy access points placed on the John Hancock building. Using Motorola's Canopy wireless broadband radios, real-time video was backhauled from the John Hancock to Boston Police headquarters located several miles away. There, representatives from the police department and other public safety agencies watched the video to monitor crowd activities and thwart potential disturbances. The total deployment time: less than two hours.

"We wanted a setup where we could put a camera in a location in two hours or less and get [the video feed] back to headquarters," says H. David Troup, Jr., director of telecommunications at the Boston Police Department's

The Connection

"Homeland security applications are all about extending reach—delivering an extra set of eyes to help us get beyond the confines of four walls and allowing us to cost-effectively extend our human resources," says Tom Cooper, regional sales manager for the Canopy Broadband Wireless Group. "In order to do this, you need high reliability and consistent performance. That's where the Canopy system comes in."

From oil field monitoring to border patrol projects, the Canopy wireless broadband system allows security officials to put a system in place quickly—and just about anywhere. "Unlike with many wireline security deployments, the Canopy system has no big rights of way or power issues. In fact, you can even support a Canopy link with

Telecommunications Division. During the Democratic National Convention, the cameras were used to monitor everything from demonstrations to traffic problems.

Boosting Efficiencies at the Command Center

Prior to the existence of these cameras, officers in the command center headquarters felt out of touch and unable to effectively direct field operations. Using video surveillance, command center officers can "either confirm or deny some of the reports coming in," Troup says, meaning that they can more efficiently direct the movements of officers throughout the city.

For instance, when it was rumored that a crowd had assembled on the Boston Commons and was marching toward the Fleet Center where convention activities were being held, officers in the command center could see whether the assembly involved 500 people or 50 people and could dispatch field officers appropriately.

"It's one thing to be a police officer in a group or a spotter on a roof. You can only see so much," says Robert Zakarian, president of Community WISP. In contrast, the cameras give command center operators the ability to zoom in on events in real-time, giving them unparalleled insight into the activities on the ground.

Wireless Network Trafficking: A Great Alternative to T1s

During the convention, Canopy broadband radios also were used to wirelessly connect nine video cameras already installed along the Southeastern Expressway in Boston to monitor for incidents and breakdowns in a convertible high occupancy vehicle lane.

The cameras previously were connected to the traffic command center via T1 lines. When the command center moved, the local phone company said it would take five or six months to run T1 lines to the new center, says Christopher Costello, systems project manager with Edwards and Kelcey, the MassHighway subcontractor responsible for the network.

That time frame was not acceptable. "Less than two weeks, we could deploy the Canopy system on existing poles with existing cameras and transmit it [video] back to the new traffic center," says Costello. "The convenience of the Canopy system allowed us to mount the subscriber modules and dishes right onto the existing poles. We just had to mount the antennas, route some new cabling, install the new encoders and it was a winner."

The only technical tweaking required was the need to convert the existing analog cameras to IP, which meant installing encoders on the camera side and decoders on the traffic operations side. The Canopy wireless broadband system provided a data rate of 256K—much faster than the 56K offered by the local phone company. This allowed traffic command to obtain a video feed that displayed eight or nine frames per second rather than one or two frames per second.

During the convention, a local television news outlet also used the Canopy wireless broadband system to provide live video feeds from four traffic bottleneck locations. The feeds were used to replace information from traffic helicopters,

solar power. These are things that you just can't do with wires."

Canopy products are designed from the ground up to support scalability as well as consistent throughput and latency, which are critical to the delivery of voice and video, as throughput and latency problems can render voice and video applications useless.

With other systems, as the cameras get further from an access point, performance drops and delay goes up. Not so with the Canopy system, which delivers much greater installation flexibility. "You can put a tower exactly where you want it," Cooper says. "You don't have to compromise."

According to Robert Zakarian, president of the wireless ISP Community WISP, the Canopy system also does a much better job of avoiding and accepting interference than alternative solutions—even at link ranges as large as 17 miles or higher. "It's designed to be the last man standing," he says.

where were grounded due to no-fly restrictions placed on the greater Boston area during the convention.

The Wireless Advantage

When it comes to security, wireless broadband offers at least two key advantages: cost and speed.

"The big advantage of wireless is there is a huge savings on the infrastructure costs," says Community WISP's Zakarian. "The Canopy system can cut 80 percent off the infrastructure costs of any type of network-based, hard wired system. You can put up a point-to-point link at an airport for \$4,000, including backhaul. Just to trench for that [with wireline], it would cost you \$60,000 to \$70,000. There isn't a community anywhere that has that kind of money."

Community WISP has used Canopy radios to support security in Boston during Super Bowl festivities in February after this year's New England Patriots victory. It is using Canopy radios to support Internet connectivity at the 40th Head of the Charles Regatta in October, supporting applications such as allowing vendors at the celebration to run credit card transactions in real-time.

Community WISP also used similar cameras to deliver full motion video—32 frames per second—to support security at the port in Portland, Maine, which hosted the Queen Mary II early this October. And it uses Canopy radios to transmit video in and around one of the nation's nuclear plants to help the facility minimize armed guard requirements.

Another key advantage of wireless is speed of deployment. "We could never pick a location and get a camera out in two hours or less if we had to depend on wireline," says Boston's Troup.

"From an event standpoint, you can't beat the portability," agrees Zakarian.

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